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FUTURES GROUP

PERIODIC REPORT 6

1 June 1981

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The views, opinions and/or findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation.

STRATEGIC STUDIES INSTITUTE
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FUTURES GROUP PERIODIC REPORT 6

by

COL Joseph L. Sites, Chairman
Mr. Charles W. Taylor

1 June 1981

DISCLAIMER

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FOREWORD

This Periodic Report of the Futures Group of the Strategic Studies Institute presents a review of work completed and in progress. This report also contains items on space; disasters as a training ground; manpower; impact of technology on the less developed countries (LDC); and interdependence. In addition, two appendices are included: a listing of Futures Group publications (Appendix A) by title, author, and date which reference the Action Control Number (ACN) found on the cover of each report, and a topical index (Appendix B) of work to date which permits the reader to quickly find Futures Group reports on various subjects.

This report was prepared as a contribution to the field of national security research and study. As such, it does not reflect the official view of the US Army War College, the Department of the Army, or the Department of Defense.

ANDREW C. REMSON, JR.
Colonel, CE
Director, Strategic Studies Institute

INTRODUCTION

During this period the Futures Group focused its work on the strategic requirements for the Army in the year 2000. The Group also made considerable progress in preparation of the first draft of its "Future Oriented Regional and World Analyses Reference Document (FORWARD)."

In addition to this work and the publications discussed in the Review of Work section, the Futures Group has been requested by other agencies (DCSPER, TRADOC, DARCOM) to assist in futures-oriented projects. A lecture was presented and seminar conducted for the World Future Society, South Carolina Chapter, Columbia, South Carolina. Another lecture was given at Indiantown Gap, Pennsylvania.

As the distribution of Futures Group documents has increased, so have the comments received. These comments are helpful; however, some of them indicate that there is a need for a better explanation of the Futures Group and its mission. Basically, the Futures Group is a small part of the Strategic Studies Institute. Its original mission was to review futurist literature, identify those items which will have significant impact for the Army and to report on those items. While retaining its original mission, the Group has expanded its efforts into work on strategy and the preparation of a futures reference document. The Futures Group reports then, should be considered as papers calling attention to possible developments. They are neither intended to be in-depth studies nor the final work on a particular subject. If the papers stimulate thought, raise questions, and perhaps become forerunners to studies, then they will have served their purpose.

REVIEW OF WORK

LTC Todd Starbuck prepared a paper, "China in the Year 2000: Modernization, Global Power, and the Strategic Balance" (ACN 81024), which discusses the efforts of China's Communist government to attain the goal of restoring China to what it sees as its rightful place in the first rank of world power. The author states that in carrying out its program, China focused on the Four Modernizations: agriculture, industry, science and technology, and national defense. Chinese leadership has demonstrated remarkable intellectual flexibility and has openly turned to the West. This program will place severe strains on political institutions, resources, and the people themselves, and it is inconceivable that the program will close the gap between the superpowers and China within 20 years. Nevertheless, China is likely to enjoy greater influence in global affairs as economic development progresses and Chinese military capabilities improve.

In his paper, "Technological Achievements and the Future Army" (ACN 81013), Mr. Charles Taylor lists a large number of possible technological achievements which might come about by the year 2000 and which have potential military application. These brief summaries provide some scope to the breadth of possible technological achievements and should stimulate thought concerning military usefulness.

Work has continued on the future world environmental reference book, "Future Oriented Regional and World Analyses Reference Document (FORWARD)." First drafts have been completed on the following sections: Africa South of the Sahara, The Americas, and China. Authors have been selected for South Asia, the Middle East and Persian Gulf, the Far East, and the Mediterranean-North African sections.

This Group prepared a first draft of a concept of military strategy for the year 2000. A meeting was held on 30 March during which representatives of both governmental agencies and civilian companies discussed the methods used in developing the concept paper, the contents, and the conclusions which could be drawn. Comments from this discussion and other comments were incorporated into a second draft. The final paper, "An Army Concept of Strategy for 2000(U)" (ACN 81037), was completed 11 May and is classified.

REVIEW OF LITERATURE

The Army in Space. Despite well-intentioned, popular desire to limit areas of conflict and to keep the military out of space, experience dictates that this will not be the case. The Soviet Union has clearly demonstrated its desire to take military advantage of any lead in space and has been prompt to decry US possibilities. If the United States does not make plans to use space for military purposes, it will most likely find itself in a strategic position similar to but far more critical than its current chemical warfare deficiencies. The following section is based on a pragmatic appraisal of space as an area of conflict.

Long-term national security planning for the next 10 to 20 years must include preparation for the mission of the Army in space. Army planners and strategists ought now to be formulating what the Army's role in space will be; how the Army might best utilize space to support land combat; what the Army's projected equipment, manpower, and training requirements will be; and how the Army's warfighting strategy can adapt as national security increasingly becomes dependent upon the contributions of military space programs. Concurrently, planners and strategists must consider the complex problems associated with the increasing use of space by US military and civilian agencies and by foreign (friendly and unfriendly) nations.

During the next two decades, the US military can expect to become increasingly involved in space.[1] The primary space role of the military will be national security; the military's most likely space missions will be

1. For a supporting view of the US military in space see Dino A. Lorenzini and Charles L. Fox, "2001: A US Space Force," Naval War College Review, Vol. 34, No. 2/Sequence 284, March-April 1981, pp. 48-67.

national defense and the protection of US citizens and property in space. Another equally important military mission shared by the Services to meet the Soviet threat in and from space will be participation in centers for command and control and for information gathering, interpretation, and dissemination (C^3). Although most military space missions are presently assigned to the Air Force, the characteristics of all military space missions are not exclusively Air Force oriented. In addition to C^3 participation, other space missions for the Army could include assisting in platform construction and maintenance, performing space custodial services (for intelligence and to reduce the hazard potential of space debris), and participating in space exploration. Army space missions, for the most part, will be controlled through ground-based Army command centers linked to Army manned and unmanned satellites. It is unlikely during the next 20 years that the Army's ground-based systems will become involved with weapon-armed satellites which could be directed against earth-bound Soviet targets.

The Soviet threat in and from space has been tested and demonstrated.[2] Although its space systems have been less sophisticated than US space systems, the Soviet Union has taken the lead in the military use of space with space platforms, satellite linkups and intercepts, and in the development of killer satellites (antisatellites). This threat justifies serious consideration of the development of US military space missions. The possibility of the United States being dominated from space by the Soviet Union will increasingly outweigh the single most significant characteristic of military space missions: the cost of space systems.

2. Ibid., pp. 49-52.

Consideration for the provision of funding US military space systems will have to be made early in the period before the year 2000. The costs of these systems (even in constant 1981 dollars) will far exceed those of earth-bound systems. Where the Services share common space systems, funding could be apportioned respective to individual mission requirements. A coherent and integrated national military space policy eventually will be needed to create the optimum US military space program. Military strategists and planners will have to define clearly each of the Services' roles in space, determine the appropriate and esoteric equipment and materiel needs for missions, and designate specialized manpower and training requirements to accommodate the planned space systems for each service.

As the Army progresses into space programs, it will have to develop new and innovative long-range management schemes which consistently and critically monitor contractor programs in order to avoid production delays, errors, and cost overrides. As defense manufacturers increasingly rely on robots to replace human workers for production, the probability of strikes and other forms of work stoppages by workers who fear displacement can be expected to create additional delays for the military's entry into space. The Army might be obligated to "piggyback" or share other military or civilian systems already in being in space to accomplish, piecemeal, its space missions. Cooperative contractual arrangements with civilian space enterprises (communications, asteroid mining, energy production) could, however, subject those systems to an increased risk of antisatellite attack. Their willingness to piggyback Army systems will probably be proportional to the cost of their satellite investment and the increased protection guaranteed by the Army.

A military mission in space which could be assigned to the Army might be custodial or "space cleanup." Since 1962 radar-tractable debris in high-orbit

space has been increasing at about 278 objects per year.[3] "This cluttering of space with debris raises issues of collision-hazard assessment, control techniques, and spacecraft survivability."[4] Until an international space management program is developed, space cluttering will probably continue. The Army could use a manned-orbiting space sweeper of sorts to collect debris and return the debris to earth for reclamation and salvage. Such an Army mission (or chore) would increase the effective use of space for military and civilian space activities, and would free the Air Force for space patrol, antisatellite and counter antisatellite activities. A clean-up mission probably would also encourage other space "litterers" to retrieve their own debris.

An Army use of space to facilitate effective land combat could be its participation in manned and unmanned orbiting command and control satellites and communication/surveillance satellites for real-time battlefield management. Satellites could provide individual voice communications for 100,000 users (troops), and plot, receive, and relay TV pictures from 3,000 remotely piloted vehicles (drone airplanes), in a war zone 1,000 miles across.[5] Army satellite systems would have to be secured (hardened to protect them from killer satellites and high-power lasers and particle beams), maneuverable, and equipped with antisatellite capability (which will have to be perfected). Theater and battlefield

3. Vladimir A. Chobotov, "Collision Hazard in Space," Astronautics & Aeronautics, Vol. 18, No. 9, September 1980, pp. 38-39.
4. Ibid.
5. Randolph J. Steer, "Military Man's Time in Space," Technology Tomorrow, Vol. 4, No. 1, February 1981, p. 10.

attack warning systems will have to be developed to link satellite information with Army ground-based radar to detect antisatellite attacks. Some form of system redundancy probably will have to be provided to support the Army's land combat/space strategy in the event antisatellite defense systems fail. This might require Army-dedicated Air Force satellite systems, or, in the case of the European theater, NATO antisatellite detection systems.

Another way the Army could effectively use space could be the maintenance and operation of especially selected and appropriate lightweight war reserve supplies in manned-orbiting satellites. Prepackaged materiel could be shuttled on call to forward or rear echelon forces when required as a supplement to pre-positioned war reserve stocks which might be exhausted or destroyed in the early phases of conflict. The complexity of such a system as this probably would preclude its development and perfection by the year 2000. The Army, however, will need to plan for the type of space activities in which it will become involved and which are directed toward improving the effectiveness of land combat.

For the Army to be successful in its space missions, equipment, manpower and training requirements must be anticipated. If the Army is to be involved in national security activities from a command space platform by the year 2000, it should be participating today in the design and construction blue-prints to assure that Army space platforms meet Army requirements. Additionally, the Army, currently, should be preparing personnel requirements and training programs under the guidance of NASA and the Air Force in anticipation of its entry into space activities. Army strategists and planners should be studying and developing the Army's warfighting strategies and tactics which will most effectively use the advantages of space for land combat.

The role of the Army in space for preserving national security augments US national defense systems. It does not duplicate the US Air Force's space role, nor will it compete for Air Force funds any more than present-day service budgetary rivalries. The Army's missions in space will be an extension of its earth-bound missions for national defense, protection of US citizens and property in space, and will be the optimum use of the war-fighting capabilities of the Army. The use of space by the Army offers opportunities for an economy of force, a force multiplication, and more timely and effective management of forces well beyond the capabilities of present-day land combat forces. Were the Army not to participate in military space activities, the Army would require dedicated Air Force systems to provide its required space support for land combat.

Disasters as Comparative Training Grounds. By the turn of the century, the Army will increase its knowledge and understanding of and improve its design of essential equipment and its training of troops for continuous operations in a nuclear environment. Two events have occurred which can provide comparative training grounds for the Army to achieve these goals. They are the Three Mile Island (TMI) incident and the volcanic eruption of Mount St. Helen. The US Army Corps of Engineers routinely provides assistance to civilian authorities when emergencies occur across the nation. Although the active Army (the Corps of Engineers), as well as the Army Reserves, and the National Guard become involved in disaster relief when called upon, there is no concerted effort to take advantage of the "spin-off," from an operational point of view, of lessons learned as they are related to battlefield situations. To acquire firsthand knowledge and achieve a better understanding of the problems related to these events, the active Army ought to be involved today in studying as well as participating in the post-recovery operations associated with disasters.

Since March 1979, a large amount of data has been collected and published regarding the nuclear accident at TMI and the problems of facility and equipment decontamination at the accident site. Such data is invaluable to the Army which may one day be called upon to conduct operations in a nuclear environment. Although the Army has considered this problem and has published field manuals on the subject, there are significant lessons to be learned by actively pursuing the Army's interests in activities at TMI as well as at other nuclear power plants where accidents or near-accidents have occurred. The insights gained possibly could assist the Army in its operations in hazardous environments as well as suggest means to reduce combatant and noncombatant casualties.

Since the series of Mount St. Helen's eruptions began in March 1980, a considerable amount of data has been published. This natural phenomena and the problems of environmental and societal recovery bear some similarity to the devastation (although of less magnitude) which would be brought about by the detonations of nuclear weapons during war (with the exception of radiation effects). Although a significant amount of damage to the environment has occurred as a result of the volcanic eruptions, substantial scientific (geological, biological, environmental, limnological, geodetical, etc.) benefits have accrued.[6] The lessons learned by scientists in the reclaiming of land, reforestation, lake and stream regeneration, and the removal of ash from clogged and impassable highways would also provide benefits to the Army. The Army's war-fighting ability, tactics, mobility, and equipment could be evaluated against the hostile environment of the disaster area. The Army could assist in the recovery process at the same time--a task not unlike the Army's mission of recovery in a post-nuclear attack situation. Additionally, the humanitarian display of the active Army's participation in disaster-recovery operations would continue to strengthen the Army's image.

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6. Stuard Dimond, "Continuum: Volcanic Payoff," Omni, Vol. 3, No. 6, March 1981, p. 39.

In the long-term, even greater benefits could possibly be derived for the United States were the US Army to be made available internationally to assist other nations in disaster recovery.

Advances in Medical Scrutiny. Toward the year 2000, medical examiners selecting Army personnel will likely be able to identify accurately which recruit will be suitable for a career in the Army; be most suitable for a specific Army occupational specialty; be physically preferred for a particular overseas region or country; and be a greater asset to the Army in a combat, combat service support, or support role. Advances in immunological techniques increasingly are providing the precise information about our medical profiles to make such selections a reality during the next two decades.

A recent article in Omni Magazine[7] discusses the role of genetic counseling as it is related to hereditary disorders (such as hemophilia and sickle-cell anemia) but, more importantly, how such counseling will be related to identifying pre-disease susceptibility (such as fibrositis, skin and lung cancer, arthritis, multiple sclerosis, coeliac disease, or duodenal ulcers). Later-life disease susceptibility could be determined at an early age or at any time. "Knowing what they might get, and when, could lead to radical changes in people's careers, life-styles, and expectations."[8]

Although no method of indexing personal medical probability profiles has been standardized, the approach hinges on the medical and prognostic knowledge of HLA (human leukocyte antigen) (currently used to detect acceptance/rejection of tissue and organ transplants and for paternity identification). The antigen patterns of HLA are providing immunologists with the telltale signs of the predisposition to different diseases. Parallel and related investigations are

7. Bernard Dixon, "Life," Omni, Vol 3, No. 6, March 1981, p. 4.
8. Ibid.

raising the prospects of distinguishing between lung cancer proneness and resistance in tobacco smokers and of proneness to lukemia and kidney carcinoma. Continued advancement is likely to uncover future susceptibility to specific climatic-associated disease (such as tropical diseases), fatigue indices, and other physical and mental disorders.

By the year 2000, such medical prognostication could increase Army effectiveness through more appropriate selection and assignment of its manpower.

The Impact of Technology on the LDC. The United States has been one of the leading exporters of technology during peacetime as well as during episodes of conflict since World War II and, in all likelihood, will continue so for the remainder of the 20th century. Recipient nations have been and will continue to be other industrial states, industrializing nations, and conspicuously, the less-developed countries (or country) (LDC). The impact of the transfer of technology and its associated "bringing of change" has affected the societies of the LDC the most. Historically, the international behavior of the LDC has been based on their respective traditional cultures, social values, and institutions. Upon the introduction of technology, their societal behavior significantly and progressively changed and the LDC became increasingly destined to new roles in international relations. Brazil, Mexico, South Korea, Taiwan, Hong Kong, and Singapore (industrializing nations) are presently making inroads in the world trading system as a result of technology transfer.[9] During the next 20 years, with a continued influx of technology, LDC international behavior will become increasingly influential in the political, economic, and military affairs of the advanced developed nations. Whether the transfer of technology is brought in for the purpose of the LDC's defense programs,

9. "Technology Transfer Reappraised," Science, Vol. 212, No. 4497, 22 May 1981, p. 902.

industrialization, or modernization of agriculture, the consequences will be the same: a significant modification of social values, institutions, and national and international behavior.[10]

Military technology brought into the LDC through military assistance programs, base agreements, or during conflict assistance is increasingly responsible for modification of the LDC. Such modification manifests itself in an altered national behavior which influences the nation's international relationships as well as its domestic intrarelationships. Most recipient LDC have in the past lacked the sophistication and capabilities to absorb, to accept, or to apply modern technology without guidance and aid. The standard of living and the quality of life may have risen for some of the people in the LDC but not for all. Technology, instead of helping to bring about stability, has tended to increase the risk of social turmoil with unsettling social and political consequences.[11] Further complicating the problem, many technologies, when brought into a developing nation, have required ancillary technologies and services which have not existed locally. Often these secondary technologies have forced the indigenous people to change life-styles. For example, foreign technologies brought into an LDC to develop, extract, and export a scarce resource have required the building of roads, acquiring a source of water (creating dams, canals, or artificial lakes), developing a source of energy (extending electrification, constructing oil storage tanks and pipelines for them, or conceivably, building a nuclear reactor), and so on. Another example has been the primary and secondary technologies associated with establishing and maintaining a military installation in an LDC by an advanced

10. Olaf Helmer, in Social Technology (New York, Basic Books, Inc., 1966), has defined this as "social technology."

11. US Congress, House of Representatives, Committee on International Relations, Science, Technology, and American Diplomacy, Vol. III, 1977, p. 1870.

allied nation. Such technologies have required new and strange (to the local society) security facilities; access roads for a variety of vehicles, fuel accommodations, traffic controls; airfields for a variety of aircraft where local agricultural land has been sacrificed; telecommunication facilities, telephones, poles and wires, antennas, and so forth. Such technologies brought into the LDC during a conflict often have remained. Each new technology retained after the conflict had been terminated almost immediately began changing and shaping the destiny of the LDC. The impact of the technologies has often been traumatic to a developing society, offending the core of its social, cultural, and religious values and creating new and poorly understood economic problems. Acquired advanced technologies are generally capital intensive. Operational labor requirements are low and give little relief to indigenous unemployment. Governments of the LDC have been aware of the frustrations and economic problems created by the penetration of the technologies of foreign corporations and the military and, by formal agreements, have attempted to restrict them. Generally, the LDC have been able to do little to protect their societies and economies from the multinational corporations (MNC).

Characteristically, the MNC have moved capital, materials, credit, managerial expertise, technology, technological skills, and even trained labor from one country to another in order to maximize their total overall and long-term profits.[12] The MNC often have eroded the national sovereignty of the LDC, competed for economic and political objectives, exploited the LDC's national resources of raw materials and people, and have departed leaving behind serious, local societal frustrations and unrest. The often inappropriate technologies

12. Ibid., Vol. I, P. 48.

left behind have tended to distort the development process of the LDC's governments, which have been held accountable. Ill equipped to deal with their new situation, the LDC's governments have resorted to political and economic pressures on the industrialized nations as well as the MNC.

By the turn of the century, however, many of the LDC will have improved their capabilities to adapt to technology and to cope with its consequences. For some, the term LDC will increasingly become inappropriate. These same LDC, as they become modernized industrially, will be competing with the older industrialized countries for nonrenewable resources (the source of which, for the most part, is in the LDC) needed for industrial output. They may even restrict or deny access to scarce resources to gain world economic markets for their industrial products.

During the next two decades, the United States will probably extend economic, security, and military assistance to many LDC and more prudently administer the transfer of technology. US Army personnel stationed in the LDC will be trained and prepared to guide host nation indigenous people in understanding the purpose of primary and secondary military technology and, in some instances, the use and accommodation of such technology within the local society. In this manner, the Army will assist in avoiding the consequences of social technology and in allowing the society of the LDC to adjust gradually and to accommodate the societal changes created by technology.

Interdependence and the Future of National Security Strategy.[13] Mr. James Morrison, OASD/ISA, prepared an extensive paper on the Interdependence and the Future of National Security Strategy. The relevancy of the paper to Futures Group work was such that the Group obtained Mr. Morrison's permission to present the highly condensed version which follows.

13. Condensation of a paper written by James W. Morrison, 4 April 1978, while attending the National War College.

The basic assumption of this paper is that the driving element furthering international development during the next two decades to the year 2000 will be interdependence among nation states. Such interdependence will be the extent by which states cooperate and depend upon one another in working out solutions to political, economic, and military problems. The US military will continue to be an integral part of an effective future US national security policy and will be used appropriately over the next two decades to assist in the derivation and maintenance of a world environment favorable to US policy objectives.

Interdependence can be multilateral or bilateral. The great majority of interstate relations are bilateral--a trend likely to continue to the year 2000. While the focus is on US interdependence with other states, interdependence among or between states other than the United States must be considered. For example, the relationship between the USSR and China or between the USSR and East Europe may have as much effect on a situation as US relations with these states or other states.

US national security policy outcomes/objectives are considered here in terms of US political, economic, and military relationships. Although states may have only an economic relationship and not a military relationship or vice versa, the political relationship is a constant which binds states in interdependency. Timing is another important consideration for interdependence. A rapid rate of change toward or away from interdependence may increase risks, yet a slow rate of change may prove to be less effective in meeting US policy objectives. Interdependence can range from high to low,

with a high level involving close relationships and a low level involving relative self-sufficiency, i.e., autarky, or, perhaps isolationism.

Over the next 20 years world relationships will continue to involve the following individual or group state actors:

United States
US Allies
Soviet Union (USSR)
Eastern Europe
People's Republic of China
Third World States

The relationships among these actors will fall into three basic patterns in terms of cooperation and interdependence: high (universal interdependence), status quo (bloc), or low (universal self-sufficiency or independence).

US policy outcomes/objectives may be ranked in terms of importance to the security of the United States. Importance would be reflected in the attention and budgetary allocations for the separate objectives. The conflicts between the objectives are:

- Physical security vs economic security = guns vs butter;
- Physical security vs values protection = security vs civil liberties;
- Economic security vs values = free enterprise vs socialism/welfarism;
- Physical/economic/value security vs international objectives = isolationist security vs enlightened world view.

During the next two decades the United States will face these conflicts and choose policy outcomes/objectives favorable for US security interests in an age of increasing interdependence. The instruments of power relevant to the pursuit of US security in an increasing interdependent environment include:

Political: diplomatic, propaganda, intelligence and clandestine operations, and international law;

Economic: rewards, punishments, economic warfare, and technology assistance and transfer;

Military: arms control, peacekeeping operations, foreign military assistance and arms transfers, weather modification, and the threat or use of force.

These instruments of power are integrally linked to the basic patterns of cooperation and interdependence and to US policy outcomes/objectives.

Six objectives are chosen for consideration; they are:

1. Physical security of the United States which addresses the extent of interdependence; i.e., to some or to all states.

2. Economic security of the United States where, from a US perspective, there can be more, status quo, or less interdependence with the key factors being resources, markets, trade, capital, and technology.

3. Preservation and protection of US values which, although not clearly defined, would consider the democratic process; human rights (political, economic, and social); and rights and protection of private property.

4. US world influence or the ability of the United States to affect the will and actions of other states--a function of the perception of the United States as a political, economic, and military superpower; and the degree of reciprocal dependency between the United States and other states.

5. Nature of the international environment which considers conflict or cooperation, stability or instability, pressures for or against the resort to force, and the balance or imbalance of power.

6. International welfare in terms of pollution, population, and the development of economic welfare or standard of living.

Table 1 illustrates how the instruments of power--political, economic, and military--can be interwoven into policy objectives in terms of assumptions about future levels of interdependence. Policies are based largely on considerations of which instruments of power are appropriate for achieving favorable outcomes. Policies could be pursued bilaterally or multilaterally or mixing of the two. The policies for each of the three columns should be considered together as part of a consistent, coherent plan combining political, economic, and military instruments serving all the six outcomes/objectives.

For instance, the military policies designed to maximize physical security of the United States may also help promote US world influence. If priorities among the six outcomes/objectives are changed because of unanticipated world events, then emphasis on policies would change accordingly.

Table 1.

Recommended US Policies for Achieving Favorable US Policy Outcomes/Objectives

Assumptions About the Level of Interdependence

Objectives	High	Status Quo	Low
I. Physical Security of the US	-Seek arms control agreements, e.g., SALT, MBFR, nuclear non-proliferation, conventional arms transfers on a broader basis than at present -Maintain strong US forces but perhaps at lower levels	-Maintain strong US forces -Maintain balance of power among major states (US, USSR, China, etc) -Maintain and improve US forces and alliances and Allied forces -Seek arms control agreements cautiously with adversaries -Transfer arms to Allies/ friends	-Develop strong US forces to (a) deter and defend against attack on US, (b) influence others to act as US desires, and (c) gain access to resources if necessary. If threat increases, US should increase its forces appropriately. -Allow alliances to wither but try to retain framework as insurance -Decrease or terminate arms transfers
II. Economic Security of the US	-Seek stable international economic system -Maximize international comparative advantage production/trade -Negotiate secure access agreements with scarce resource producers -Reduce tariffs and trade barriers	-Pursue comparative advantage production/trade except in areas that could lead to strategic vulnerabilities -Use foreign source of scarce resources while preserving US' -Share technology -Continue foreign aid for influence	-Focus attention on US economy without respect for impact on world economy -Maintain diversified economy with capability to go to autarky. -Preserve technological superiority -Discourage or restrict imports -Find internal US solutions to every problem -Terminate foreign aid
III. Preservation and Protection of US values	-Promote US values abroad, i.e., democracy, human rights, free markets, etc., while permitting foreign values free reign in US	-Promote US values abroad to extent feasible while protecting US values at home	-Protect values within US
IV. US World Influence	-Maximize communication linkages thru diplomatic and propaganda instruments -Maximize US interdependence as way of maximizing US influence	-Maintain/improve communication linkages especially in security areas (e.g., hot lines) thru diplomatic/ political instruments -Use military and economic superpower status as basis for influence -Use clandestine operations to promote US influence	-Maintain influence and communication linkages only to aid deterrence against attack on US
V. International Environment Nature	-Promote international organization as major solution to issues -Promote peaceful settlement of disputes; rely on international law -Promote pluralism and diffusion of power	-Generally promote peaceful settlement of disputes -Encourage polycentrism among Communist states -Use intelligence and clandestine operations to try to promote stability -Use peacekeeping operations to establish order -Prevent nuclear proliferation	-Try to prevent nuclear proliferation
VI. International Welfare	-Provide and promote high levels of Western economic aid for growth and welfarism -Promote high standards of population and pollution control	-Maintain limited economic aid programs -Promote population and pollution control	-Terminate economic aid programs -Protect US from pollution to extent possible

APPENDIX A

FUTURES GROUP PUBLICATIONS

ACN	Title	Author	Date
79034	NATO in 2000	Joseph L. Sites	8 Jan 80
79047	Cultural Revolution	John F. Scott	9 Jan 80
79049	Periodic Report 1	Joseph L. Sites, John F. Scott, Charles W. Taylor	25 Jan 80
80002	The Validity of Deterrence: 1980 to the Twenty-First Century	Charles W. Taylor	2 Jan 80
80006	North-South Issues	John F. Scott	15 Jul 80
80010	Periodic Report 2	Joseph L. Sites, John F. Scott, Charles W. Taylor	15 Jun 80
80014	Periodic Report 3	Joseph L. Sites, John F. Scott, Charles W. Taylor	1 Nov 80
80024	Poverty--A Source of Conflict	Joseph L. Sites	25 Aug 80
80027	Economic Sanctions in the 1990's	Donald L. Losman	30 Oct 80
80052	The New Nuclear Strategy	John F. Scott	12 Sep 80
80055	The Year 2000 and the US Army	Joseph L. Sites, John F. Scott, Charles W. Taylor	10 Nov 80
80056	The Future of US-Japan Relations, 1990-2000	William V. Kennedy	26 Jan 81
80057	The Soviet Union, Iran and Pakistan in the 1990's: Security Implications for the United States	Robert G. Darius	7 Nov 80
80061	Scientific Innovation and the Future Army	Charles W. Taylor	1 Dec 80
80067	Periodic Report 4	Joseph L. Sites, John F. Scott, Charles W. Taylor	1 Dec 80
81001	Latin America in the 1990's: Implications for US Security	Gabriel Marcella	1 Jan 81
81012	The LRTNF Decision in NATO: Implications for the Alliance and for the Army	John F. Scott	9 Feb 81
81013	Technological Achievements and the Future Army	Charles W. Taylor	10 Feb 81

ACN	Title	Author	Date
81014	Indonesia in the Year 2000	Thomas L. Wilborn	1 Feb 81
81017	The Future of the Islamic Revival	Shirin Tahir-Kheli	18 Feb 81
81023	Periodic Report 5	Joseph L. Sites and Charles W. Taylor	1 Mar 81
81024	China in the Year 2000: Modernization, Global Power, and the Strategic Balance	Todd R. Starbuck	16 Mar 81
81031	Periodic Report 6	Joseph L. Sites and Charles W. Taylor	1 Jun 81
81037	An Army Concept of Strategy for 2000 (U)	A Futures Group Report (Classified)	11 May 81

APPENDIX B

TOPICAL INDEX
TO
FUTURES GROUP PUBLICATIONS

UNCLASSIFIED

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This is the sixth periodic report of the Futures Group and covers these following subjects: the Army in space, disasters as training grounds, the impact of technology on the less-developed countries, and interdependence and future national security strategy. This report, additionally, contains an index of the Futures Group publications.

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